

REMARKS

Pending Claims

Claims 1 and 11 have been amended. Accordingly, claims 1-20 are currently pending.

Priority

Applicants appreciate the Examiner's acknowledgment of the claim for priority and receipt of the priority document.

35 U.S.C. §103

Claims 1, 3-11 and 13-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over the admitted prior art (APA), in view of Suzuki et al, U.S. Patent No. 5,786,852 (Suzuki) in view of Nobuoka, U.S. Patent No. 5,986,698, and further in view of Kato, U.S. Patent No. 6,148,031. Further, claims 2 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over the admitted prior art Suzuki, Nobuoka and Kato combination, further in view of Okayama et al, U.S. Publication No. 2003/0122941.

Claims 1 and 11, which are the independent claims, recite that the pixel signals accumulated in each of the pixels are outputted with interlace by sub-sampling the pixel signals for every one line in the first mode (still image mode), and, in the second mode (motion image mode), a sum of the pixel signals in the two pixels adjoining each other in the vertical direction are sequentially outputted. As amended, the claimed combination of claims 1 and 11 includes a rate converter which converts a number of the output images of the second video signal per a unit time into another number which is more than the number of output images before the conversion, from a non-interlaced scan into an interlaced scan, and converts the number of lines of the output images of the second video signal into another number which is less than the number of lines before the conversion, which is approximately equal to the number of lines of a field displayed on a monitor. Each of claims 1 and 11 has been further amended to set forth that the monitor displays plural fields with interlace.

Support for the amendments can be found in the specification as originally filed. For example, see the paragraph bridging pages 4 and 5 of the specification. As

stated in the example set forth in the specification, before conversion, a signal of 480 lines is read at a rate of one picture per 1/30 seconds and the pixel signals from two pixels adjoining each other are read out by adding the pixel signals of two pixels adjoining each other in the vertical direction in order to be sequentially output with non-interlace. After conversion into the interlace signal, the number of output images per unit time is, for example, one picture per 1/60 seconds and the number of lines of the output images is 240 lines. Applicants note that the number of scanning lines before and after conversion can be other than 480 and 240, respectively. See page 10, lines 8-24 of the specification, for example.

Suzuki discloses a CCD image sensor in which an image signal is read from the CCD in two different modes. The first mode is a field mode in which the signals of all pixels are acquired into a vertical transfer part with the signals of two pixels adjacent vertically to one another added together, and the resultant signals transferred in the vertical transfer part. In the second mode, a frame mode, signals of pixels on odd numbered lines and even numbered lines are acquired and

transferred separately to the vertical transfer part.

Although Suzuki discloses two modes of signal reading, neither the APA nor the reference discloses the signal processor for converting signals in a specified format and the rate converter, as recognized in the Office Action.

The rejection relies upon Nobuoka for suggesting that it would be obvious to one having ordinary skill in the art to modify the APA and Suzuki combination to include the claimed signal processor for converting signals in a specified format and the rate converter. The rejection specifically states that these elements of the claimed combination are inherently taught by the Nobuoka reference, however, the independent claims have been amended to set forth that the rate converter converts a number of the output images of the second video signal per a unit time into another number which is more than the number of output images before the conversion, from a non-interlaced scan into an interlaced scan, and converts the number of lines of the output images of the second video signal into another number which is less than the number of lines before the conversion, which is approximately equal to the number of lines of a field displayed on a monitor. The

disclosure of generating both video signals of various kinds of standards (NTSC, PAL) and signals for a still image output medium in Nobuoka is insufficient to inherently suggest the signal processor for converting signals in a specified format and the rate converter claimed by Applicants.

In addition to the APA, Suzuki and Nobuoka references, Kato is relied upon in the rejection for disclosing image compression and decompression. However, Kato is similarly deficient in disclosing the signal processor for converting signals in a specified format and the rate converter as are the APA, Suzuki and Nobuoka, and therefore the reference does not provide that which is missing from the combination of references that is required in order to support the 35 USC §103 rejection. Therefore, the rejection should be withdrawn.

Claims 2 and 12 are rejected by relying upon the APA, Suzuki, Nobuoka and Kato combination of references in combination with the Okayama reference. However, these claims are respectively dependent on claims 1 and 11, and therefore the rejection should be withdrawn for the foregoing reasons.

Conclusion

In view of the foregoing amendments and remarks, Applicants contend that the above-identified application is now in condition for allowance. Accordingly, reconsideration and reexamination is requested.

Respectfully submitted,



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